



## SEQUENCE LISTING

<110> Pfizer Inc.  
Castleberry, Tessa A.  
Lu, Bihong  
Owen, Thomas A.  
Smock, Steven L.

<120> Canine Parathyroid Hormone 1 Receptor

<130> PC10891AGPR

<140> US 09/943,446

<141> 2001-08-30

<150> US 60/229,170

<151> 2000-08-30

<160> 12

<170> PatentIn version 3.1

<210> 1

<211> 2177

<212> DNA

<213> Canis Familiaris

<400> 1  
ggcgcccgcc cgccgcccgc cgggcccccg gctgctccc ttctccctc cctctcttcc 60  
tcccttgccg tcgctcgctc gctcgccctc ggcgcatggg ccccgcgccg ggccccgggg 120  
cctcgggccg cctggcctcc ggggtccctt agggccgggc gtgggcgggg cagcccggcc 180  
tgacgcagcc tctgtacccc accaccacca ccaccagggc cggcggcggc ggctgccccg 240  
agggacgggg ccctaggcgg tggcgatggg ggccgtccgg atcgcgcccg gcctggcgct 300  
gctgctctgc tgcccgggtg tcagctccgc gtacgcgctg gtggatgcag atgacgtcat 360  
gaccaaagag gagcagatct tctgtctgca ccgcgccag gccagtgcc agaagcgget 420  
caaagaagtc ctgcagaggc cagctgacat aatggaatca gacaaaggat gggcttctgc 480  
atccacatca gggaagccta agaaagagaa ggcatctggg aagctctacc ctgagtcgga 540  
ggaggacaag gaggtgcccc ctggcagcag gcaccgaggg cggccctgcc tgcccagtg 600  
ggaccacatc ctttgctggc cgctgggggc accagggtgag gtggtggctg tgccctgtcc 660  
cgactacatt tatgacttca atcaciaaagg ccatgcctac cgtcgctgtg accgcaatgg 720  
cagctgggag ctggtgcctg gacacaaccg gacgtgggcc aactacagcg agtgtgtcaa 780  
gttcttgacc aacgagactc gtgaacggga ggtgtttgac cgctgggca tgatctacac 840  
cgtgggctac tccgtgtcgc tggcctccct caccgtggcc gtgctcatcc tggcctactt 900  
caggcggtcg cactgcacac gcaactacat ccacatgcac ctgttctgt cttcatgct 960  
tcgcgcgctg agcatcttcg tcaaggacgc ggtgctctac tcgggcgcca cgctcgacga 1020

ggccgagcgc ctcacggagg aagagctgcg cgccatcgcc caggcacccc cgccgcccac	1080
cgccgcccgc ggctacgcgg gctgcagggg agctgtgacc ttcttccttt atttcctggc	1140
caccaactac tactggattc tgggtggaggg gctgtacctg catagtctca tcttcatggc	1200
cttcttctca gagaagaagt acctgtgggg cttcacggtc ttcggtggg gtctgcccgc	1260
cgtcttcgtg gctgtgtggg tcagcgtgag agccaccctg gccaacaccg ggtgctggga	1320
cttgagctcc gggaacaaga agtggatcat ccagggtgcc atcctggcct ctattgtgct	1380
caacttcac tttttcatca acatcgctcg ggtgctcgcc accaagctgc gggagaccaa	1440
tgcggccgg tgtgacacgc ggcagcagta ccggaagctg ctcaaatacca cactggtgct	1500
catgccgctc tttggcgctc actacatcgt cttcatggcc acgccgtaca ccgaggtctc	1560
agggacgctc tggcaagctc agatgcacta cgagatgctc ttcaactcct tccagggatt	1620
ttttgtcgcc atcatatact gtttctgcaa tggcgaggta caggccgaga tcaagaaatc	1680
ctggagccgc tggacactgg ccttggactt caagcgcaag gcccggaagtg ggagcagcag	1740
ttacagctac ggcccgatgg tgtctcacac gagcgtgacc aacgtaggcc cccgcgcggg	1800
acttggcctg cccctcagcc cccgcctgct gcccgccgct gccgccacca ccaccgccac	1860
caccaacggc cccccccga tcccgggcca caccaagcca ggggccccga ccttcccggc	1920
cacaccacct gccacggctg ctcccaagga cgatgggttc ctcaacggct cctgctcggg	1980
gctggacgag gaggcctccg cgccggagcg gcctcccgcc ctgctgcagg aggagtggga	2040
gacggtcatg tgatcgggga cctgtgccag ggttggactc gtggacataa gggccgacag	2100
acggaccaag agacaggcgg ttggacagtt gccactcag ggctggggct gggaagacaa	2160
aacaaaaaaaa aaaaaaa	2177

<210> 3A  
 <211> 1788  
 <212> DNA  
 <213> Canis Familiaris

<400> 3A atgggggccc tccggatcgc gcccggcctg gcgctgctgc tctgctgcc ggtgctcagc	60
tccgcgtacg cgctgggtga tgcagatgac gtcatgacca aagaggagca gatcttcttg	120
ctgcaccgcg cccaggccca gtgccagaag cggtctaaag aagtcctgca gaggccagct	180
gacataatgg aatcagacaa aggatgggct tctgcatcca catcaggga gctaagaaa	240
gagaaggcat ctgggaagct ctaccctgag tccgaggagg acaaggaggt gccactggc	300
agcaggcacc gagggcgcgc ctgcctgccc gagtgggacc acatcctttg ctggccgctg	360
ggggcaccag gtgaggtggt ggctgtgcc tgtcccgact acatttatga cttcaatcac	420

aaaggccatg cctaccgtcg ctgtgaccgc aatggcagct gggagctggt gcctggacac	480
aaccggacgt gggccaacta cagcgagtgt gtcaagttcc tgaccaacga gactcgtgaa	540
cgggaggtgt ttgaccgcct gggcatgate tacaccgtgg gctactccgt gtcgctggcc	600
tcctcaccg tggccgtgct catcctggcc tacttcaggc ggctgcactg cacacgcaac	660
tacatccaca tgcacctgtt cctgtccttc atgcttcgcg ccgtgagcat cttegtcaag	720
gacgcggtgc tctactcggg cgccacgctc gacgaggccg agcgccctac ggaggaagag	780
ctgcgcgcca tcgcccaggc acccccgccg cccaccgccc ccgcccggcta cgcgggctgc	840
agggtagctg tgaccttctt cctttatttc ctggccacca actactactg gattctgggtg	900
gaggggctgt acctgcatag tctcatcttc atggccttct tctcagagaa gaagtacctg	960
tggggcttca cggctcttcg ctgggggtctg cccgccgtct tcgtggctgt gtgggtcagc	1020
gtgagagcca ccctggccaa caccgggtgc tgggacttga gctccgggaa caagaagtgg	1080
atcatccagg tgcccatcct ggccctctatt gtgtcaact tcactctgtt catcaacatc	1140
gtccgggtgc tcgccaccaa gctgcgggag accaatgccg gccggtgtga cacgcggcag	1200
cagtaccgga agctgtcaa atccacactg gtgtcatgc cgctctttgg cgtccactac	1260
atcgtcttca tggccacgcc gtacaccgag gtctcaggga cgctctggca agtccagatg	1320
cactacgaga tgctcttcaa ctctctccag ggattttttg tcgccatcat atactgtttc	1380
tgcaatggcg aggtacaggc cgagatcaag aaatcctgga gccgctggac actggccctg	1440
gacttcaagc gcaaggcccg aagtgggagc agcagttaca gctacggccc gatggtgtct	1500
cacacgagcg tgaccaacgt aggccccgc gcgggacttg gcctgcccct cagccccgc	1560
ctgctgcccg ccgtgcccgc caccaccacc gccaccacca acggccaccc cccgatcccg	1620
ggccacacca agccaggggc cccgaccctc ccggccacac cacctgccac ggctgctccc	1680
aaggacgatg ggttctcaa cggctcctgc tcggggctgg acgaggaggc ctccgcgccg	1740
gagcggcctc ccgcctgct gcaggaggag tgggagacgg tcatgtga	1788

<210> 3B  
 <211> 1776  
 <212> DNA  
 <213> Rattus Norvegicus

<400> 3B	
atgggggccc cccgatcgc accagcctg gcgtcctac tctgctgcc agtgctcagc	60
tccgcatatg cgctgggtgga tgcggacgat gtctttacca aagaggaaca gattttcctg	120
ctgcaccgtg cccaggcgca atgtgacaag ctgctcaagg aagttctgca cacagcagcc	180
aacataatgg agtcagacaa gggctggaca ccagcatcta cgtcagggaa gccagggaaa	240

gagaaggcat cggaaggtt ctaccctgag tctaaagaga acaaggacgt gcccaccggc	300
agcaggcgca gagggcgctc ctgtctgccc gagggggaca acatcgtttg ctggccatta	360
ggggcaccag gtgaagtggg ggcagtagct tgccccgatt acatttatga cttcaatcac	420
aaaggccatg cctacagacg ctgtgaccgc aatggcagct gggagggtgg tccaggggcac	480
aaccggacgt gggccaacta cagcgagtgc ctcaagttca tgaccaatga gacgcgggaa	540
cgggagggtat ttgaccgctt aggcattgat tacaccgtgg gatactccat gtctctcgcc	600
tccctcacgg tggtctgtgt cactctggcc tatttttagg ggctgcactg cacgcgcaac	660
tacatccaca tgcacatgtt cctgtcgttt atgtctgcgc cgcgagcat ctctgtgaag	720
gacgctgtgc tctactctgg cttcacgctg gatgaggccg agcgccctac agaggaagag	780
ttgcacatca tcgcgaggt gccacctccg ccggccgctg ccgccgtagg ctacgctggc	840
tgccgcgtgg cgggtgacct ctctctctac ttctgggcta ccaactacta ctggattctg	900
gtggagggggc tgaacttgca cagcctcatc ttcatggcct tttctcaga gaagaagtac	960
ctgtgggggt tcacctctt tggtgggggt ctaccggctg tctctgtggc tgtgtgggtc	1020
gggtgtcagag caaccttggc caacactggg tgctgggacg tgagctccgg gcacaagaag	1080
tggatcatcc aggtgccccat cctggcatct gttgtgtca acttcactct ttttatcaac	1140
atcatccggg tgcttgccac taagcttcgg gagaccaatg cgggccgggtg tgacaccagg	1200
cagcagtacc ggaagctgct caggctcacg ttggtgctcg tgccgctctt tgggtgtccac	1260
tacaccgtct tcatggcctt gccgtacacc gaggtctcag ggacattgtg gcagatccag	1320
atgcattatg agatgctctt caactccttc cagggatttt ttggtgccat catatactgt	1380
ttctgcaatg gtgagggtgca ggcagagatt aggaagtcac ggagccgctg gacactggcg	1440
ttggacttca agcgcaaagc acgaagtggg agtagcagct acagctatgg cccaatgggtg	1500
tctcacacga gtgtgaccaa tgtggggccc cgtgcaggac tcagcctccc cctcagcccc	1560
cgctgcctc ctgccactac caatggccac tcccagctgc ctggccatgc caagccaggg	1620
gtccagcca ctgagactga aacctacca gtcactatgg cggttcccaa ggacgatgga	1680
ttcttaacg gctcctgctc aggcctggat gaggaggcct ccgggtctgc gcggccgctt	1740
ccattgttgc aggaagaatg ggaaacagtc atgtga	1776

<210> 3C  
 <211> 1776  
 <212> DNA  
 <213> Mus Musculus

<400> 3C	
atggggaccg cccggatcgc acccagcctg gcgctccttc tctgctgccc agtgctcagc	60

tccgcatatg cgctggtgga cgcagacgat gtctttacca aagaggaaca gattttcctg	120
ctgcaccgtg cccagggcgca atgtgacaag ctgctcaagg aagtctctgca cacagcagcc	180
aacataatgg agtcagacaa aggggtggact ccagcatcta cgtcagggaa gccccaggaaa	240
gagaaggcac cgggaaagtt ctaccccgag tctaaagaga acaaggatgt gccccaccggc	300
agcaggcgcc gagggcgctc ctgtctgcca gagtgggaca acatcgtttg ctggccattg	360
ggggcaccag gtgaagtggg ggcagtacct tgtcccgatt acatttatga cttcaaccac	420
aaaggccatg cctacagacg ctgcgaccgc aatggcagct gggagggtgg tccagggcac	480
aaccggacgt gggccaacta cagcgagtgc ctcaagttca tgaccaatga gactcgggaa	540
cgggaggtat ttgaccgcct gggcatgate tacaccgtgg gatattccat gtctcttgcc	600
tccctaccg tggctgtgct cactctagcc tattttaggg ggctgcactg cacgcgcaac	660
tacatccaca tgcacatggt cctgtcgttt atgtgcgcg ccgcgagcat cttcgtgaag	720
gacgtgtgc tctactctgg cttcacgtg gatgagggcg agcgccctcac ggaggaagag	780
ttgcatatca tcgcgcaggt gccgcctccg cccgccgctg ccgccgttgg ctacgtggc	840
tgccgtgtgg ccgtgacctt ctctctctac ttcttggtta ccaactacta ctggattctg	900
gtggagggac tgtacttaca cagcctcatc ttcattggct tttctcaga gaagaagtat	960
ctgtgggggt tcaccatctt tggctggggg ctgccggctg tcttcgtggc tgtgtgggtc	1020
ggtgtcagag caaccttggc caacactggg tgctgggacc tgagctctgg gcacaagaag	1080
tggatcatcc aggtgccccat cctggcatct gttgtgctca acttcatcct ctttatcaac	1140
atcatecggg tgcttgccac taagcttcgg gagaccaatg cgggccgggtg tgacaccagg	1200
cagcagtacc ggaagctgct caggtccacg ttggtgcttg tgccactctt cgggtgtccac	1260
tacaccgtct tcatggcctt gccgtacacc gaggtctcag ggacactgtg gcagatccag	1320
atgcactatg agatgctctt caactccttc cagggatttt ttgttgccat catatactgt	1380
ttctgcaatg gtgaggtgca ggcagagatt aggaagtctt ggagccgctg gacactggca	1440
ttggacttca agcgtaaagc acgaagtggg agtagcagct acagctatgg cccaatgggt	1500
gcacacacga gtgtgaccaa tgtggggccc cgtgcaggac tcagccttcc ccttagcccc	1560
cgctgcttc ctgccaccac caatggccac tcccagctgc ctggccacgc caagccgggc	1620
gctccagcca ttgagaacga aaccatacca gttactatga cagttcccaa ggacgacggc	1680
ttccttaatg gctcctgctc gggctctggat gaggaggcct ctgggtctgc gcggccacct	1740
ccattgttgc aggaagaatg ggaaacagtc atgtga	1776

<211> 1776  
<212> DNA  
<213> Homo Sapiens

<400> 3D  
atggggaccg cccggatcgc acccagcctg gcgcctcttc tctgctgccc agtgctcagc 60  
tccgcataatg cgctggtgga cgcagacgat gtctttacca aagaggaaca gattttcctg 120  
ctgcaccgtg cccaggcgca atgtgacaag ctgctcaagg aagttctgca cacagcagcc 180  
aacataatgg agtcagacaa aggggtggact ccagcatcta cgtcagggaa gcccaggaaa 240  
gagaaggcac cgggaaagtt ctaccccgag tctaaagaga acaaggatgt gcccaccggc 300  
agcaggcgcc gagggcgctc ctgtctgcca gagtgggaca acatcgtttg ctggccattg 360  
ggggcaccag gtgaagtggg ggcagtacct tgtcccgatt acatttatga cttcaaccac 420  
aaaggccatg cctacagacg ctgcgaccgc aatggcagct gggagggtgg tccagggcac 480  
aaccggacgt gggccaacta cagcgagtgc ctcaagttca tgaccaatga gactcgggaa 540  
cgggaggtat ttgaccgctt gggcatgate tacaccgtgg gatattccat gtctcttgcc 600  
tccttcaccg tggtctgtgt catcctagcc tattttaggg ggctgcactg cacgcgcaac 660  
tacatccaca tgcacatggt cctgtcggtt atgctgcgcg ccgcgagcat cttcgtgaag 720  
gacgtctgtc tctactctgg cttcacgctg gatgaggccg agcgctcac ggaggaagag 780  
ttgcatatca tcgcgcaggt gccgcctccg cccgccgctg ccgccgttgg ctacgctggc 840  
tgccgtgtgg cctgtgacct cttcctctac ttcttggtta ccaactacta ctggattctg 900  
gtggagggac tgtacttaca cagcctcacc ttcatggcct ttttctcaga gaagaagtat 960  
ctgtgggggt tcaccatctt tggctggggg ctgccggctg tcttcgtggc tgtgtgggtc 1020  
gggtgtcagag caaccttggc caaactggg tgctgggacc tgagctctgg gcacaagaag 1080  
tggatcacc aggtgcccc cctggcatct gttgtgtc caactcact ctttatcaac 1140  
atcatccggg tgettgccac taagcttcgg gagaccaatg cgggccgggtg tgacaccagg 1200  
cagcagtacc ggaagctgct caggtccacg ttggtgcttg tgccactctt cgggtgtccac 1260  
tacaccgtct tcatggcctt gccgtacacc gaggtctcag ggacactgtg gcagatccag 1320  
atgcactatg agatgctctt caactccttc cagggatttt ttggtgcat catatactgt 1380  
ttctgcaatg gtgaggtgca ggcagagatt aggaagtctt ggagccgctg gacactggca 1440  
ttggacttca agcgtaaagc acgaagtggg agtagcagct acagctatgg cccaatgggt 1500  
gcacacacga gtgtgaccaa tgtgggcccc cgtgcaggac tcagccttcc ccttagcccc 1560  
cgctgtcttc ctgccaccac caatggccac tcccagctgc ctggccacgc caagccgggc 1620  
gtccagcca ttgagaacga aaccatacca gttactatga cagttcccaa ggacgacggc 1680

ttccttaatg gctcctgctc gggctctggat gaggaggcct ctgggtctgc gcggccacct 1740

ccattgttgc aggaagaatg ggaaacagtc atgtga 1776

<210> 2A  
<211> 595  
<212> PRT  
<213> Canis Familiaris

<400> 2A

Met Gly Ala Val Arg Ile Ala Pro Gly Leu Ala Leu Leu Leu Cys Cys  
1 5 10 15

Pro Val Leu Ser Ser Ala Tyr Ala Leu Val Asp Ala Asp Asp Val Met  
20 25 30

Thr Lys Glu Glu Gln Ile Phe Leu Leu His Arg Ala Gln Ala Gln Cys  
35 40 45

Gln Lys Arg Leu Lys Glu Val Leu Gln Arg Pro Ala Asp Ile Met Glu  
50 55 60

Ser Asp Lys Gly Trp Ala Ser Ala Ser Thr Ser Gly Lys Pro Lys Lys  
65 70 75 80

Glu Lys Ala Ser Gly Lys Leu Tyr Pro Glu Ser Glu Glu Asp Lys Glu  
85 90 95

Val Pro Thr Gly Ser Arg His Arg Gly Arg Pro Cys Leu Pro Glu Trp  
100 105 110

Asp His Ile Leu Cys Trp Pro Leu Gly Ala Pro Gly Glu Val Val Ala  
115 120 125

Val Pro Cys Pro Asp Tyr Ile Tyr Asp Phe Asn His Lys Gly His Ala  
130 135 140

Tyr Arg Arg Cys Asp Arg Asn Gly Ser Trp Glu Leu Val Pro Gly His  
145 150 155 160

Asn Arg Thr Trp Ala Asn Tyr Ser Glu Cys Val Lys Phe Leu Thr Asn  
165 170 175

Glu Thr Arg Glu Arg Glu Val Phe Asp Arg Leu Gly Met Ile Tyr Thr  
180 185 190

Val Gly Tyr Ser Val Ser Leu Ala Ser Leu Thr Val Ala Val Leu Ile

195

200

205

Leu Ala Tyr Phe Arg Arg Leu His Cys Thr Arg Asn Tyr Ile His Met  
 210 215 220

His Leu Phe Leu Ser Phe Met Leu Arg Ala Val Ser Ile Phe Val Lys  
 225 230 235 240

Asp Ala Val Leu Tyr Ser Gly Ala Thr Leu Asp Glu Ala Glu Arg Leu  
 245 250 255

Thr Glu Glu Glu Leu Arg Ala Ile Ala Gln Ala Pro Pro Pro Pro Thr  
 260 265 270

Ala Ala Ala Gly Tyr Ala Gly Cys Arg Val Ala Val Thr Phe Phe Leu  
 275 280 285

Tyr Phe Leu Ala Thr Asn Tyr Tyr Trp Ile Leu Val Glu Gly Leu Tyr  
 290 295 300

Leu His Ser Leu Ile Phe Met Ala Phe Phe Ser Glu Lys Lys Tyr Leu  
 305 310 315 320

Trp Gly Phe Thr Val Phe Gly Trp Gly Leu Pro Ala Val Phe Val Ala  
 325 330 335

Val Trp Val Ser Val Arg Ala Thr Leu Ala Asn Thr Gly Cys Trp Asp  
 340 345 350

Leu Ser Ser Gly Asn Lys Lys Trp Ile Ile Gln Val Pro Ile Leu Ala  
 355 360 365

Ser Ile Val Leu Asn Phe Ile Leu Phe Ile Asn Ile Val Arg Val Leu  
 370 375 380

Ala Thr Lys Leu Arg Glu Thr Asn Ala Gly Arg Cys Asp Thr Arg Gln  
 385 390 395 400

Gln Tyr Arg Lys Leu Leu Lys Ser Thr Leu Val Leu Met Pro Leu Phe  
 405 410 415

Gly Val His Tyr Ile Val Phe Met Ala Thr Pro Tyr Thr Glu Val Ser  
 420 425 430

Gly Thr Leu Trp Gln Val Gln Met His Tyr Glu Met Leu Phe Asn Ser  
 435 440 445



Phe Gln Gly Phe Phe Val Ala Ile Ile Tyr Cys Phe Cys Asn Gly Glu  
450 455 460

Val Gln Ala Glu Ile Lys Lys Ser Trp Ser Arg Trp Thr Leu Ala Leu  
465 470 475 480

Asp Phe Lys Arg Lys Ala Arg Ser Gly Ser Ser Ser Tyr Ser Tyr Gly  
485 490 495

Pro Met Val Ser His Thr Ser Val Thr Asn Val Gly Pro Arg Ala Gly  
500 505 510

Leu Gly Leu Pro Leu Ser Pro Arg Leu Leu Pro Ala Ala Ala Thr  
515 520 525

Thr Thr Ala Thr Thr Asn Gly His Pro Pro Ile Pro Gly His Thr Lys  
530 535 540

Pro Gly Ala Pro Thr Leu Pro Ala Thr Pro Pro Ala Thr Ala Ala Pro  
545 550 555 560

Lys Asp Asp Gly Phe Leu Asn Gly Ser Cys Ser Gly Leu Asp Glu Glu  
565 570 575

Ala Ser Ala Pro Glu Arg Pro Pro Ala Leu Leu Gln Glu Glu Trp Glu  
580 585 590

Thr Val Met  
595

<210> 2B  
<211> 591  
<212> PRT  
<213> Rattus Norvegicus

<400> 2B

Met Gly Ala Ala Arg Ile Ala Pro Ser Leu Ala Leu Leu Leu Cys Cys  
1 5 10 15

Pro Val Leu Ser Ser Ala Tyr Ala Leu Val Asp Ala Asp Asp Val Phe  
20 25 30

Thr Lys Glu Glu Gln Ile Phe Leu Leu His Arg Ala Gln Ala Gln Cys  
35 40 45

Asp Lys Leu Leu Lys Glu Val Leu His Thr Ala Ala Asn Ile Met Glu  
50 55 60

Ser Asp Lys Gly Trp Thr Pro Ala Ser Thr Ser Gly Lys Pro Arg Lys  
65 70 75 80

Glu Lys Ala Ser Gly Lys Phe Tyr Pro Glu Ser Lys Glu Asn Lys Asp  
85 90 95

Val Pro Thr Gly Ser Arg Arg Arg Gly Arg Pro Cys Leu Pro Glu Trp  
100 105 110

Asp Asn Ile Val Cys Trp Pro Leu Gly Ala Pro Gly Glu Val Val Ala  
115 120 125

Val Pro Cys Pro Asp Tyr Ile Tyr Asp Phe Asn His Lys Gly His Ala  
130 135 140

Tyr Arg Arg Cys Asp Arg Asn Gly Ser Trp Glu Val Val Pro Gly His  
145 150 155 160

Asn Arg Thr Trp Ala Asn Tyr Ser Glu Cys Leu Lys Phe Met Thr Asn  
165 170 175

Glu Thr Arg Glu Arg Glu Val Phe Asp Arg Leu Gly Met Ile Tyr Thr  
180 185 190

Val Gly Tyr Ser Met Ser Leu Ala Ser Leu Thr Val Ala Val Leu Ile  
195 200 205

Leu Ala Tyr Phe Arg Arg Leu His Cys Thr Arg Asn Tyr Ile His Met  
210 215 220

His Met Phe Leu Ser Phe Met Leu Arg Ala Ala Ser Ile Phe Val Lys  
225 230 235 240

Asp Ala Val Leu Tyr Ser Gly Phe Thr Leu Asp Glu Ala Glu Arg Leu  
245 250 255

Thr Glu Glu Glu Leu His Ile Ile Ala Gln Val Pro Pro Pro Pro Ala  
260 265 270

Ala Ala Ala Val Gly Tyr Ala Gly Cys Arg Val Ala Val Thr Phe Phe  
275 280 285

Leu Tyr Phe Leu Ala Thr Asn Tyr Tyr Trp Ile Leu Val Glu Gly Leu

290

295

300

Tyr Leu His Ser Leu Ile Phe Met Ala Phe Phe Ser Glu Lys Lys Tyr  
 305 310 315 320

Leu Trp Gly Phe Thr Ile Phe Gly Trp Gly Leu Pro Ala Val Phe Val  
 325 330 335

Ala Val Trp Val Gly Val Arg Ala Thr Leu Ala Asn Thr Gly Cys Trp  
 340 345 350

Asp Leu Ser Ser Gly His Lys Lys Trp Ile Ile Gln Val Pro Ile Leu  
 355 360 365

Ala Ser Val Val Leu Asn Phe Ile Leu Phe Ile Asn Ile Ile Arg Val  
 370 375 380

Leu Ala Thr Lys Leu Arg Glu Thr Asn Ala Gly Arg Cys Asp Thr Arg  
 385 390 395 400

Gln Gln Tyr Arg Lys Leu Leu Arg Ser Thr Leu Val Leu Val Pro Leu  
 405 410 415

Phe Gly Val His Tyr Thr Val Phe Met Ala Leu Pro Tyr Thr Glu Val  
 420 425 430

Ser Gly Thr Leu Trp Gln Ile Gln Met His Tyr Glu Met Leu Phe Asn  
 435 440 445

Ser Phe Gln Gly Phe Phe Val Ala Ile Ile Tyr Cys Phe Cys Asn Gly  
 450 455 460

Glu Val Gln Ala Glu Ile Arg Lys Ser Trp Ser Arg Trp Thr Leu Ala  
 465 470 475 480

Leu Asp Phe Lys Arg Lys Ala Arg Ser Gly Ser Ser Ser Tyr Ser Tyr  
 485 490 495

Gly Pro Met Val Ser His Thr Ser Val Thr Asn Val Gly Pro Arg Ala  
 500 505 510

Gly Leu Ser Leu Pro Leu Ser Pro Arg Leu Pro Pro Ala Thr Thr Asn  
 515 520 525

Gly His Ser Gln Leu Pro Gly His Ala Lys Pro Gly Ala Pro Ala Thr  
 530 535 540

Glu Thr Glu Thr Leu Pro Val Thr Met Ala Val Pro Lys Asp Asp Gly  
545 550 555 560

Phe Leu Asn Gly Ser Cys Ser Gly Leu Asp Glu Glu Ala Ser Gly Ser  
565 570 575

Ala Arg Pro Pro Pro Leu Leu Gln Glu Glu Trp Glu Thr Val Met  
580 585 590

<210> 2C  
<211> 591  
<212> PRT  
<213> Mus Musculus

<400> 2C

Met Gly Thr Ala Arg Ile Ala Pro Ser Leu Ala Leu Leu Leu Cys Cys  
1 5 10 15

Pro Val Leu Ser Ser Ala Tyr Ala Leu Val Asp Ala Asp Asp Val Phe  
20 25 30

Thr Lys Glu Glu Gln Ile Phe Leu Leu His Arg Ala Gln Ala Gln Cys  
35 40 45

Asp Lys Leu Leu Lys Glu Val Leu His Thr Ala Ala Asn Ile Met Glu  
50 55 60

Ser Asp Lys Gly Trp Thr Pro Ala Ser Thr Ser Gly Lys Pro Arg Lys  
65 70 75 80

Glu Lys Ala Pro Gly Lys Phe Tyr Pro Glu Ser Lys Glu Asn Lys Asp  
85 90 95

Val Pro Thr Gly Ser Arg Arg Arg Gly Arg Pro Cys Leu Pro Glu Trp  
100 105 110

Asp Asn Ile Val Cys Trp Pro Leu Gly Ala Pro Gly Glu Val Val Ala  
115 120 125

Val Pro Cys Pro Asp Tyr Ile Tyr Asp Phe Asn His Lys Gly His Ala  
130 135 140

Tyr Arg Arg Cys Asp Arg Asn Gly Ser Trp Glu Val Val Pro Gly His  
145 150 155 160

Asn Arg Thr Trp Ala Asn Tyr Ser Glu Cys Leu Lys Phe Met Thr Asn  
165 170 175

Glu Thr Arg Glu Arg Glu Val Phe Asp Arg Leu Gly Met Ile Tyr Thr  
180 185 190

Val Gly Tyr Ser Met Ser Leu Ala Ser Leu Thr Val Ala Val Leu Ile  
195 200 205

Leu Ala Tyr Phe Arg Arg Leu His Cys Thr Arg Asn Tyr Ile His Met  
210 215 220

His Met Phe Leu Ser Phe Met Leu Arg Ala Ala Ser Ile Phe Val Lys  
225 230 235 240

Asp Ala Val Leu Tyr Ser Gly Phe Thr Leu Asp Glu Ala Glu Arg Leu  
245 250 255

Thr Glu Glu Glu Leu His Ile Ile Ala Gln Val Pro Pro Pro Pro Ala  
260 265 270

Ala Ala Ala Val Gly Tyr Ala Gly Cys Arg Val Ala Val Thr Phe Phe  
275 280 285

Leu Tyr Phe Leu Ala Thr Asn Tyr Tyr Trp Ile Leu Val Glu Gly Leu  
290 295 300

Tyr Leu His Ser Leu Ile Phe Met Ala Phe Phe Ser Glu Lys Lys Tyr  
305 310 315 320

Leu Trp Gly Phe Thr Ile Phe Gly Trp Gly Leu Pro Ala Val Phe Val  
325 330 335

Ala Val Trp Val Gly Val Arg Ala Thr Leu Ala Asn Thr Gly Cys Trp  
340 345 350

Asp Leu Ser Ser Gly His Lys Lys Trp Ile Ile Gln Val Pro Ile Leu  
355 360 365

Ala Ser Val Val Leu Asn Phe Ile Leu Phe Ile Asn Ile Ile Arg Val  
370 375 380

Leu Ala Thr Lys Leu Arg Glu Thr Asn Ala Gly Arg Cys Asp Thr Arg  
385 390 395 400

Gln Gln Tyr Arg Lys Leu Leu Arg Ser Thr Leu Val Leu Val Pro Leu

405

410

415

Phe Gly Val His Tyr Thr Val Phe Met Ala Leu Pro Tyr Thr Glu Val  
420 425 430

Ser Gly Thr Leu Trp Gln Ile Gln Met His Tyr Glu Met Leu Phe Asn  
435 440 445

Ser Phe Gln Gly Phe Phe Val Ala Ile Ile Tyr Cys Phe Cys Asn Gly  
450 455 460

Glu Val Gln Ala Glu Ile Arg Lys Ser Trp Ser Arg Trp Thr Leu Ala  
465 470 475 480

Leu Asp Phe Lys Arg Lys Ala Arg Ser Gly Ser Ser Ser Tyr Ser Tyr  
485 490 495

Gly Pro Met Gly Ala His Thr Ser Val Thr Asn Val Gly Pro Arg Ala  
500 505 510

Gly Leu Ser Leu Pro Leu Ser Pro Arg Leu Leu Pro Ala Thr Thr Asn  
515 520 525

Gly His Ser Gln Leu Pro Gly His Ala Lys Pro Gly Ala Pro Ala Ile  
530 535 540

Glu Asn Glu Thr Ile Pro Val Thr Met Thr Val Pro Lys Asp Asp Gly  
545 550 555 560

Phe Leu Asn Gly Ser Cys Ser Gly Leu Asp Glu Glu Ala Ser Gly Ser  
565 570 575

Ala Arg Pro Pro Pro Leu Leu Gln Glu Glu Trp Glu Thr Val Met  
580 585 590

&lt;210&gt; 2D

&lt;211&gt; 593

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 2D

Met Gly Thr Ala Arg Ile Ala Pro Gly Leu Ala Leu Leu Leu Cys Cys  
1 5 10 15

Pro Val Leu Ser Ser Ala Tyr Ala Leu Val Asp Ala Asp Asp Val Met  
20 25 30

Thr Lys Glu Glu Gln Ile Phe Leu Leu His Arg Ala Gln Ala Gln Cys  
35 40 45

Glu Lys Arg Leu Lys Glu Val Leu Gln Arg Pro Ala Ser Ile Met Glu  
50 55 60

Ser Asp Lys Gly Trp Thr Ser Ala Ser Thr Ser Gly Lys Pro Arg Lys  
65 70 75 80

Asp Lys Ala Ser Gly Lys Leu Tyr Pro Glu Ser Glu Glu Asp Lys Glu  
85 90 95

Ala Pro Thr Gly Ser Arg Tyr Arg Gly Arg Pro Cys Leu Pro Glu Trp  
100 105 110

Asp His Ile Leu Cys Trp Pro Leu Gly Ala Pro Gly Glu Val Val Ala  
115 120 125

Val Pro Cys Pro Asp Tyr Ile Tyr Asp Phe Asn His Lys Gly His Ala  
130 135 140

Tyr Arg Arg Cys Asp Arg Asn Gly Ser Trp Glu Leu Val Pro Gly His  
145 150 155 160

Asn Arg Thr Trp Ala Asn Tyr Ser Glu Cys Val Lys Phe Leu Thr Asn  
165 170 175

Glu Thr Arg Glu Arg Glu Val Phe Asp Arg Leu Gly Met Ile Tyr Thr  
180 185 190

Val Gly Tyr Ser Val Ser Leu Ala Ser Leu Thr Val Ala Val Leu Ile  
195 200 205

Leu Ala Tyr Phe Arg Arg Leu His Cys Thr Arg Asn Tyr Ile His Met  
210 215 220

His Leu Phe Leu Ser Phe Met Leu Arg Ala Val Ser Ile Phe Val Lys  
225 230 235 240

Asp Ala Val Leu Tyr Ser Gly Ala Thr Leu Asp Glu Ala Glu Arg Leu  
245 250 255

Thr Glu Glu Glu Leu Arg Ala Ile Ala Gln Ala Pro Pro Pro Pro Ala  
260 265 270

Thr Ala Ala Ala Gly Tyr Ala Gly Cys Arg Val Ala Val Thr Phe Phe  
275 280 285

Leu Tyr Phe Leu Ala Thr Asn Tyr Tyr Trp Ile Leu Val Glu Gly Leu  
290 295 300

Tyr Leu His Ser Leu Ile Phe Met Ala Phe Phe Ser Glu Lys Lys Tyr  
305 310 315 320

Leu Trp Gly Phe Thr Val Phe Gly Trp Gly Leu Pro Ala Val Phe Val  
325 330 335

Ala Val Trp Val Ser Val Arg Ala Thr Leu Ala Asn Thr Gly Cys Trp  
340 345 350

Asp Leu Ser Ser Gly Asn Lys Lys Trp Ile Ile Gln Val Pro Ile Leu  
355 360 365

Ala Ser Ile Val Leu Asn Phe Ile Leu Phe Ile Asn Ile Val Arg Val  
370 375 380

Leu Ala Thr Lys Leu Arg Glu Thr Asn Ala Gly Arg Cys Asp Thr Arg  
385 390 395 400

Gln Gln Tyr Arg Lys Leu Leu Lys Ser Thr Leu Val Leu Met Pro Leu  
405 410 415

Phe Gly Val His Tyr Ile Val Phe Met Ala Thr Pro Tyr Thr Glu Val  
420 425 430

Ser Gly Thr Leu Trp Gln Val Gln Met His Tyr Glu Met Leu Phe Asn  
435 440 445

Ser Phe Gln Gly Phe Phe Val Ala Ile Ile Tyr Cys Phe Cys Asn Gly  
450 455 460

Glu Val Gln Ala Glu Ile Lys Lys Ser Trp Ser Arg Trp Thr Leu Ala  
465 470 475 480

Leu Asp Phe Lys Arg Lys Ala Arg Ser Gly Ser Ser Ser Tyr Ser Tyr  
485 490 495

Gly Pro Met Val Ser His Thr Ser Val Thr Asn Val Gly Pro Arg Val  
500 505 510

Gly Leu Gly Leu Pro Leu Ser Pro Arg Leu Leu Pro Thr Ala Thr Thr



515

520

525

Asn Gly His Pro Gln Leu Pro Gly His Ala Lys Pro Gly Thr Pro Ala  
 530 535 540

Leu Glu Thr Leu Glu Thr Thr Pro Pro Ala Met Ala Ala Pro Lys Asp  
 545 550 555 560

Asp Gly Phe Leu Asn Gly Ser Cys Ser Gly Leu Asp Glu Glu Ala Ser  
 565 570 575

Gly Pro Glu Arg Pro Pro Ala Leu Leu Gln Glu Glu Trp Glu Thr Val  
 580 585 590

Met

<210> 4  
 <211> 15  
 <212> PRT  
 <213> Rattus Norvegicus

<400> 4

Cys Thr Leu Asp Glu Ala Glu Arg Leu Thr Glu Glu Glu Leu His  
 1 5 10 15

<210> 5  
 <211> 20  
 <212> DNA  
 <213> Canis Familiaris

<400> 5  
 tgcccaggat ccacaactgg 20

<210> 6  
 <211> 20  
 <212> DNA  
 <213> Canis Familiaris

<400> 6  
 gtccacgagt ccaaccctgg 20